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ABSTRACT

This Joint Explorations Program for Home Economics/Industrial Arts, middle years, is a guide and support document related to the curriculum guides for Home Economics 7-9, and Industrial Arts 7-9. Developed as part of the overall revision of the Home Economics and Industrial Arts programs for the junior high schools of Manitoba, the guide provides materials to help the teacher design an 80-hour explorations program that includes two areas of study in home economics and two in industrial arts. The exploratory program is intended to provide students with a wide range of experiences that enhance the awareness and development of students' technical ability, judgment, self-reliance, resourcefulness, and knowledge of self, all of which lead to becoming more effective producers and consumers. An "Overview" section presents the rationale for a joint explorations program, discusses how the content of the program is related to the adolescent developmental stages, describes the program structure, and lists exploratory objectives and program goals and objectives. The "Implementation" section covers program design, scope and sequence, time allotment, selection of materials, evaluation, and students with special needs. The areas of study in home economics and in industrial arts are listed, and suggestions are offered for choosing areas of study and exploratory objectives. (YLB)

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joint explorations program

a supplement to

home economics/industrial arts 7

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The Joint Explorations Program for Home Economics/Industrial Arts, middle years, is a guide and support document related to the curriculum guides for Home Economics 7-9, and Industrial Arts, 7-9. It has been developed as part of the overall revision of the Home Economics and Industrial Arts programs for the junior high schools of Manitoba. It is based on recommendations included in the Report of the Home Economics and Industrial Arts Task Force of 1978 and Education in the Middle Years, a 1977 position paper of the Middle Years Program Review Committee, as well as suggestions from junior high school and community college teachers.

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overview

OVERVIEW

INTRODUCTION

The Joint Explorations Program for Home Economics/Industrial Arts, middle years, is based on the revised curricula for home economics and industrial arts in the junior high school. The joint explorations program reflects the philosophy of the Middle Years Program Review Committee and provides exploratory learning experiences which will enable students to maximize their effectiveness as individuals.

The Middle Years Program Review Committee and the Home Economics and Industrial Arts Task Force have recommended that the curricula for home economics and industrial arts:

1. de-emphasize the sex bias in roles and expectations normally assigned to home economics and industrial arts programs;
2. minimize the sequencing of courses to enable students to participate in a wide variety of learning experiences by providing an exploratory program, particularly at the introductory level.

The curriculum also reflects the effects of a rapidly changing society, awareness of many forms of industry and industrial processes, and social and technological changes which influence lifestyles and business/industry.

RATIONALE

The study of home economics and industrial arts in the junior high school program in Manitoba is designed to help students clarify values, set personal goals, and acquire skills for improving the quality of life for individuals and groups in business, industry, community, and society.

Home economics and industrial arts have much to contribute to the growth and development of students in the middle years and to the curriculum of the middle years school. Home economics and industrial arts help emerging and early adolescents in their search for identity and development of self-concept; encourage the development of such basic skills as learning how to learn and making decisions; encourage the development of skills in personal and family life and in business and industrial processes; explore possible career choices in home economics- and industrial arts-related areas; and provide opportunities for students to develop new interests, growing capacities, and effective use and control of resources and technologies.

The exploratory program at the introductory level provides students with a wide range of experiences. These experiences enhance the awareness and development of students' technical ability, judgment, self-reliance, resourcefulness, and knowledge of self, all of which lead to becoming more effective producers and consumers.

The study of the joint explorations program will enable students to:

1. Appreciate the interdependence of the individual, the family, groups in business/industry and society, and understand the factors in these areas which assist individuals in meeting basic needs.

2. Understand the influences which affect decision-making and realize that one can use natural and industrial resources effectively in making choices which are satisfying and accountable to self, family, groups, business/industry, and community.

3. Identify values and priorities in life and consider the quality of life as much as the quantity of production and consumption.

4. Understand the ways in which an individual, alone or as part of a group, can increase opportunities to achieve potential and satisfaction in life.

5. Appreciate good craftsmanship and design, both in the products of modern industry and in artifacts from the cultures of the past.

6. Understand the necessity to adjust and adapt in a world of change.

7. Develop knowledge and skills to improve human relations and to meet the present and future needs of society.

8. Appreciate the interdependence and realize the importance of practicing the management skills of planning, organizing, and controlling work.

9. Develop critical thinking related to materials, tools, and processes of industry, and use creative expression related to industrial materials.

10. Recognize the importance of safety in the use and maintenance of tools, energy, equipment, and materials appropriate to various technologies.

11. Develop positive attitudes towards safety, conservation, ecology, and technology.

12. Recognize consumer rights and responsibilities relating to self and to various types of industries.

13. Understand and recognize the vocations and general occupational characteristics of various types of industries.

14. Recognize the relationship of personal interests, abilities, preferences, and values to various career areas.

THE DEVELOPMENTAL STAGES OF ADOLESCENTS

The content of the joint explorations program for home economics/industrial arts is closely related to adolescent developmental stages. The adolescent years are a period of transition, and within this period, students' development varies widely.

An outline of typical characteristics of junior high students has been used as a guide in creating, adapting, and suggesting learning experiences. Characteristics of adolescents may be described under the following headings: cognitive, physical, emotional, social, and moral. All aspects of development are interconnected. (Curriculum guides for Home Economics 7-9, and Industrial Arts 7-9 provide charts to show the relationships between adolescent needs, characteristics, and appropriate activities.)

STRUCTURE OF THE PROGRAM

The curriculum for the middle years joint explorations program is divided into a minimum of four areas of study, comprised of objectives from a minimum of two curricular areas for home economics and for industrial arts.

The two areas of study for home economics should be selected from Human Development, Nutrition and Foods, Textiles and Clothing. The two areas of study for industrial arts should be chosen from Construction, Drafting, Graphic Arts, Graphic Communications, Electricity/Electronics, Power Mechanics, Power/Energy, Metalwork, Plastics, Woodwork, Manufacturing. The four curricular areas for the joint explorations program will depend upon the facilities available, staff preferences, student choices, transportation, time allotment, and staff and student schedules.

The curriculum content provides exploratory experiences and establishes basic understanding and skills at the introductory level.

Each of the three areas of study for home economics include the following: major objectives, generalizations, student objectives, and suggested activities. These components are explained in the curriculum guide, Home Economics.

Each of the eleven areas of study for industrial arts include the following: major objectives, student objectives, suggested activities and notes, and resources. These components are listed and explained in the curriculum guides, Industrial Arts 7-9.

GOALS AND OBJECTIVES

EXPLORATORY OBJECTIVES - MIDDLE YEARS HOME ECONOMICS

The exploratory objectives are designated by the numbering system used for all the objectives in the grade seven Home Economics curriculum.

Human Development

The student should be able to:

- I.A.1. identify the basic needs of human beings;
- I.B.3. state how a family meets basic needs of an individual;
- I.B.7. relate the effects of heredity and home environment on the development of an individual;
- I.B.9. explain that development occurs in a predictable manner;
- I.C.1. state how play assists in the physical development of a child;
- I.D.1. generalize that child care involves responsibility and knowledge of supervision and guidance of children.

Nutrition and Foods

The student should be able to:

- I.A.4. explain basic functions of nutrient groups;
- I.B.5. demonstrate the application of Canada's Food Guide in planning nutritious breakfasts;
- II.A.1. state that every individual is a consumer;
- III.A.3. explain the information on a food label;
- III.A.2. explain the use, care, and placement of equipment;

III.A.4. relate organization to setting goals and working cooperatively to achieve them;
III.A.5. identify potential hazards in the kitchen;
III.B.3. select standard units and techniques to measure specific ingredients.

Textiles and Clothing

The student should be able to:

II.B.1. explain that fabrics are made from fibers and yarns;
III.A.5. select, use, and care for equipment efficiently,
III.B.3. identify the parts of the sewing machine;
III.B.4. explain the purposes of the sewing machine parts;
III.B.6. identify construction steps to be followed when using simple patterns;
III.B.8. identify pattern symbols;
III.B.9. demonstrate the application of basic sewing techniques to construct a project.

EXPLORATORY OBJECTIVES - MIDDLE YEARS INDUSTRIAL ARTS

Refer to the curriculum guides for Industrial Arts 7-9, 1983. Choose two areas of study, and select exploratory objectives for the joint explorations program from the objectives listed for the CORE modules, identified in the tabulations for the eleven curricular areas at the front of each guide. Relate the exploratory objectives chosen from the CORE modules to the 20 hours of time allotment for each area and to the facility for industrial arts. The following curricular areas offer CORE modules:

- Construction
- Drafting
- Graphic Arts
- Graphic Communications
- Electricity/Electronics
- Power Mechanics
- Power/Energy
- Metalwork
- Plastics
- Woodwork
- Manufacturing

PROGRAM GOALS

The general goals of the joint explorations program are to assist students to:

- explore home economics and industrial arts at the introductory level;
- acquire an understanding of self;
- understand how personal, family business, industrial, and societal needs are met through positive interrelationships;
- develop skills to meet needs in the home, the community, and business/industry;
- develop a high degree of safety consciousness;
- become increasingly questioning, creative, and critical consumers of natural and industrial resources and accept responsibilities for decisions made;
- become involved in energy-saving, ecology, conservation, and technological studies and activities;
- develop confidence, high standards of performance, and a sense of pride in achievement;
- acquire a foundation in skills and knowledge related to materials and technical procedures;

- gain an insight into various types of industries and their relationship to individuals, communities, society, and economic systems and conditions;
- develop creative potential, both avocationally and vocationally;
- achieve a degree of competency that leads to further education, training, or employment;
- acquire an understanding of the relationship between technological advances, requirements of individuals, communities, society, and economic systems and conditions;
- develop skills to make choices leading toward the attainment of a better quality of life.

PROGRAM OBJECTIVES

The classifications of educational objectives -- psychomotor, affective, and cognitive -- have a relationship to each other. Frequently, at least two, if not all three, types of learning occur simultaneously. The teacher may choose to concentrate on one objective at a time or to correlate two or more objectives. It is possible to incorporate all three types of objectives as components of behavior or action. The student may be developing a skill and, at the same time, acquiring an attitude or value as well as a knowledge of principles related to the skill.

All students in a particular area of study are expected to attain the exploratory objectives for the two areas of study selected for home economics and the two areas of study chosen for industrial arts within the time allotment of 20 hours for each area of study.

implementation

PROGRAM DESIGN

The curriculum guide has been designed to help teachers meet the needs of adolescents, with relevance to the rapid changes in society. This guide is flexible in order to encourage teachers to use personal knowledge and creativity in planning and implementing programs. The following points are pertinent to program design.

1. The format of joint explorations program is similar to some sections of the junior high school curricula for both home economics and industrial arts.

2. Practical and theoretical knowledge are interrelated. The content is practical in its purpose, organization and use, and theoretical in recognizing and understanding the concepts of self and interpersonal relationships, and the processes by which problems are solved and decisions are made.

3. Ideally, the curriculum is student-oriented in content and in approach to instruction. Emphasis is placed on creative exploration, self-direction, and independence. Because peer relationships are so important, some group work is emphasized. Instruction should be flexible to accommodate the wide variations in individual growth rates and stages of development.

4. The joint explorations curriculum has clearly defined exploratory objectives for 20 hours of instruction for each of the two areas of study in home economics. The exploratory objectives for the two areas of study in industrial arts are to be selected from the core modules and related to the 20-hour time allotment for each area. These objectives and the program goals become the criteria by which content is specified, procedures are developed, materials and resources are selected, and evaluative techniques are prepared. For extended programs and maximum time allotment, teachers may pursue additional exploratory topics.

5. The sequential order of subject matter within levels provides a systematic approach to the development of the program. Other approaches allow teachers flexibility to select learning content and processes which will help students develop skills, attitudes, and understanding as bases for making and implementing reasonable and responsible decisions.

<u>The Process Approach</u> involves the mastery of essential processes, such as searching, classifying, and categorizing information; hypothesizing, testing, valuing, criticizing, planning, problem-solving and decision-making; and reporting.

<u>The Project Approach</u> incorporates a number of different educational activities, such as investigating, analyzing, planning, constructing, synthesizing, evaluating, purposing, defining, and relating. The project should be a means to an end/goal and not the goal itself. The purpose of the project approach is to implement and develop the content and processes related to the area of study, as well as to contribute to the development of individuals.

<u>The Decision-Making Approach</u>, basic to all areas of the program, includes the processes of inquiry, valuing, decision, and action.

The Needs Approach assumes that individuals and groups have certain physical, aesthetic, social, and psychological needs, and is based on meeting those needs.

The Family Life Cycle Approach uses the family life cycle as its base and includes the tasks associated with each of its stages.

The Problem Approach, the case study, is based on the observation that individuals, families, groups of individuals, communities, and businesses encounter problems which relate to survival and living in society. The techniques used in the classroom should include a variety of problems related to everyday living.

6. Because learning is unique for each student, in every aspect of home economics and industrial arts, a rich environment for exploration must be provided. The environment for learning should include attractive, well organized, and safe surroundings, suitable and sufficient materials, and good working equipment.

   Learning is facilitated if student goals are achieved and if the student participates in the selection and planning of classroom projects. Classroom experiences should progress from one successful accomplishment to another.

7. The suggested activities listed for home economics in the joint explorations guide and chosen from the junior high school guide for industrial arts are designed to help students achieve objectives. These experiences help students acquire knowledge, learn skills, evaluate attitudes and values, and develop understanding, appreciation, and perception. The most relevant activities provide the understanding necessary to lead to the achievement of the objective and greater support and credibility to the topic.

   The activities listed in the joint exploratory and industrial arts guides are suggestions only and are intended to provide initial assistance in developing a wide range of activities to meet the students' needs. Students should be involved in the selection of learning experiences. Teachers must consider the cultural background of students, their previous experience, and students with special needs to provide maximum opportunities for student learning.

   The structure of the content is the key to the encouragement of further learning.

SCOPE AND SEQUENCE

The areas of study selected for home economics and industrial arts may be taught separately, or combined where possible. The joint explorations classes may be co-educational, all girls or all boys, or scheduled by class or areas of study selected. Teachers of the joint explorations program should emphasize and integrate vocabulary study, safety, consumerism, career information, decision-making, inter-personal relationships, positive attitudes and work habits, communication skills, resource management, needs, values, goals, and laboratory organization throughout the program. To this end, these topics are woven into each curricular area.

The scope and sequence should be a developmental progression of tasks and learning. The following are criteria to consider when making choices:

1. the logical development of learning in each area;
2. students' geographical and cultural background;
3. students' maturation;
4. students' needs, including special needs, developmental tasks, and experiences;
5. the amount of repetition that may be justified;
6. provision for new and exciting experiences;
7. the extent to which learning can be extended;
8. the resources available;
9. the most effective use of time, energy, and equipment.

TIME ALLOTMENT

Each of the four areas of the Joint Explorations Program for Home Economics/Industrial Arts should consist of not less than 20 hours of instruction. Forty hours of instruction should be allocated to home economics and 40 hours to industrial arts. Therefore, the total instructional time for the joint explorations program should not be less than 80 hours. There should be a balance of time alloted to the theoretical and practical aspects of the program. It is recommended that teaching theory comprise 30-40% of time allotment, and student practice comprise 60-70%. Projects selected for practical experience should be chosen in relation to the time available.

SELECTION OF MATERIALS

The suggested activities in the curriculum refer, in some instances, to approved textbooks and support materials which are basic to these activities. Classroom sets of selected, recommended materials would be desirable. There should be a balance of materials in and among all areas. Additional recommended references for each area of the program are included in the bibliography for the junior high school curriculum for home economics and industrial arts.

The use of a variety of resource materials enriches the experiences of students in individual and group work. Because a wide variety of textbooks and publications are available in Manitoba schools, each teacher can support instruction with current information, suitable to student needs. Recently published textbooks and support materials are in metric. Home economics and industrial arts teachers have been introducing metric measurements and purchasing necessary equipment since Canada's conversion to the SI system.

EVALUATION

Evaluation is part of the education process and is necessary to determine whether the objectives have been met. It should assess various abilities and knowledge, and progress towards some objective(s). It should be considered as an ongoing, cooperative process of making judgments based on documented experiences, with the aim of influencing the direction of future learning experiences.

The areas of study, modules and the objectives, emphasize both the practical aspects of skill mastery and the principles associated with the theories in home economics and industrial arts. Students should be involved in evaluating their progress, in determining objectives for the areas of study, the modules, and the objectives, and in selecting methods of evaluation.

PROCESS OF EVALUATION

The process of evaluation must begin with a clear understanding of its purposes. The purposes of evaluation in a given situation vary according to the needs at the time:

- assessing the attainment of an objective;
- measuring various aspects of learning, such as knowledge, values, and manual skills;
- discovering what students already know;
- motivating students to learn;
- providing information for guidance and counseling;
- providing a basis for curriculum changes.

Stating objectives is the first and most important step in the evaluation process. They can be stated in a variety of ways and can provide for cognitive, affective, and psychomotor outcomes at all levels, from simple to complex. The interrelationships among these three domains are evident. Seldom does a learning situation involve only one, and often there are situations which involve all three.

Cognitive objectives should include all six cognitive levels. Affective objectives should help students become aware of their own values. Students should appreciate the need for tolerance of others' values. Psychomotor objectives should stress the process of learning, rather than the product.

Objectives are most effective in evaluation when they are:

- stated in terms of desired student learning outcomes;
- consistent with the structure of the subject matter;
- realistic in terms of students' abilities;
- in agreement with learning principles;
- respective of the needs of the learners.

EVALUATION TECHNIQUES AND METHODS

The following points apply to all evaluation techniques and methods:

- The choice of evaluation procedure will reflect the purposes for which results will be used.
- The greater the variety of evaluation technique used, the more probable is a fair judgment.
- Motivation and achievement are affected by the type of evaluation method chosen.
- The intent of an objective and the method used to evaluate should be related.
- To be sound, the procedure selected must measure the content it is chosen to measure.
- The types of subject matter taught affects the choice of evaluation techniques.
- Attitudes are more likely to be positive if students participate in determining objectives, selecting means of evaluation, and evaluating their own progress.
- When learners can use self-evaluation techniques, they are better able to identify their own needs and to take initiative in learning.
- The effectiveness of evaluation techniques is affected by the balance among validity, reliability, usability, and the evaluation techniques selected.

Evaluation techniques may be classified as:

1. Real life situations:
   - observational techniques;
   - peer appraisal and self-report techniques.
2. Simulation techniques.

3. Laboratory management and techniques.
4. Projects. When ranking, quality is important but the time taken to complete the project must also be considered. The project should show evidence of an appreciation of the dignity of craftsmanship and a pride in the high level of achievement.
5. Tests. Tests provide some type of educational feedback that other techniques cannot provide. They include written tests, oral tests, performance tests, and written exercises.

Evaluation should address the psychomotor, cognitive, and affective domains, and should be based on the curriculum's objectives. Periodic tests would measure achievement so that the required sequence of skill development and attainment of theoretical understanding can be monitored. Because of the wide variety of offerings and emphases in the program, student achievement may be assessed on an individual basis, focusing on areas which correspond best to particular interests and aptitudes.

"Evaluation is a cooperative, continuous process of making judgements, in terms of recognized objectives or standards on the basis of recorded evidence based on past and present experiences, in order to affect the direction of future experience."[1]

STUDENTS WITH SPECIAL NEEDS

Both gifted students and those with special handicaps may benefit from study in the joint explorations program. Because the program requires the mastery of exploratory objectives, these studies can provide valuable learning experiences for the special needs students in a wide range of opportunities related to home economics/ industrial arts.

Teaching these students successfully requires a sound knowledge of their characteristics and of effective ways of teaching them, and a desire to release their potential for satisfying living.

Special needs may be categorized as:

- Physical - deafness/hearing impairment, blindness/ visual impairment, orthopedic handicap, general health impairment.
- Cultural - language and experiential background effects.
- Emotional - ranging from mental illness (severe) to interpersonal relationship problems (less severe).
- Intellectual - general cognitive ability, with particular reference to conceptualization and abstraction.

Few curricular materials have been designed for teaching home economics- and industrial arts-related content to students with special needs. However, provincial programs and support services are available to assist the teacher in identifying the characteristics of students with special needs, and in choosing and using teaching techniques.

Administrators and teachers have identified five areas of educational needs for special students. The degree of need varies according to the individual:

1. socializing skills;
2. positive self-concept development;

[1] Spitze, Hazel Taylor and Griggs, Mildred Barnes, Choosing Evaluation Techniques (Winnipeg, MB: Home Economics Association, 1973), p. 53.

3. daily living activities experiences;
4. independence;
5. employability and occupational skill development.

STRATEGIES TO DEVELOP AN APPROPRIATE PROGRAM

- Be as well informed about students as possible.
- Be aware of impact of various family lifestyles.
- Apply teaching strategies and materials consonant with the students' learning strengths and weaknesses, and cognitive functioning abilities.
- Each student with a special need presents a unique challenge to the teacher to develop basic concepts and skills for that individual to proceed independently to the level of his/her ability.
- Instruction for the handicapped should be as systematic as possible.
- Content and/or skills should be broken down into small, discrete segments, then linked together in a logical, organized sequence. Sometimes, the teacher needs only to describe the degree of content and/or increase the number of examples to aid the low-ability learner.
- Constant reinforcement is important. Retention problems are reduced if strategies include careful task analysis, hands on experiences, tactile demonstrations, and recognition of individual differences and needs.
- Essential content and skills are necessary for the handicapped student to master, as well as for everyone else.
- All students, regardless of handicap, need to learn to read, write, compute, make decisions and solve problems.
- Some adaptation of facilities and special equipment may be necessary for convenient and safe use of equipment and space. An enriched program may require additional materials and laboratory equipment.
- Encourage the optimal development of the gifted students by enriching the program, employing unusual and challenging teaching and motivational devices, and encouraging students to maintain established high levels of achievement.
- Some teaching strategies are applicable for all learners, regardless of ability level; e.g., reinforcement and encouragement, simple clear directions, use of examples, and fostering a caring relationship.
- All students should be encouraged to experiment, innovate, search, test, and observe.
- The instructional approach should stimulate students' range of knowledge, skills, and their desire for expanding creative abilities, and provide opportunities to work independently, assume responsibility, and develop leadership abilities.

AREAS OF STUDY FOR HOME ECONOMICS

- Human Development
- Nutrition and Foods
- Textiles and Clothing

Minimum of two areas to be selected.
Time allotment: 20 hours for each area.

Refer to the curriculum guide for Home Economics 7-9, 1982. Select a minimum of two areas of study related to the school facility, equipment, and resources available for the Home Economics exploratory junior high program. Choose the exploratory objectives for the middle years joint explorations program from the objectives listed on page 6, and cited as CORE for the areas of study. Relate the exploratory objectives chosen from the COPE modules for the two areas of study to the 20 hours of time allotment for each area, and to the facility for Home Economics.

AREAS OF STUDY FOR INDUSTRIAL ARTS

- Construction
- Drafting
- Graphic Arts
- Graphic Communications
- Electricity/Electronics
- Power Mechanics
- Power/Energy
- Manufacturing
- Metalwork
- Plastics
- Woodwork

Minimum of two areas to be selected.
Time allotment: 20 hours for each area.

Refer to the curriculum guides for Industrial Arts 7-9, 1983 and 1984. Select a minimum of two areas of study related to the school facility, equipment, and resources available for the industrial arts junior high school program. Choose exploratory objectives for the middle years joint explorations program from the objectives listed for the core modules for the areas of study. Relate the exploratory objectives chosen from the core modules for the two areas of study to the 20 hours of time allotment for each area and to the facility for industrial arts.